

**VERSATILE SYSTEM FOR ELECTROSTATIC DISCHARGE PROTECTION
UTLIZING SILICON CONTROLLED RECTIFIER**

ABSTRACT

The present invention provides a system for electrostatic discharge protection in a
5 semiconductor device, utilizing a silicon-controlled rectifier (502). The system includes the
silicon controlled rectifier, which has a first p-type region (508) coupled to a voltage node
(504), a first n-type region (512) having a first side adjoining the first p-type region, a second
p-type region (510) having a first side adjoining a second side of the first n-type region, and a
second n-type region (514) having a first side adjoining a second side of the second p-type
10 region. A clamping structure (506) is intercoupled between the second n-type region and
ground, to prevent the junction between the second p-type region and the second n-type
region from retaining a forward bias. A switching structure (518) is intercoupled between
the second p-type region and ground to ground the second p-type region during normal
operation of the semiconductor device.